
Education for Work: The Current Dilemma of Post-Compulsory Education

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Abstract

The human capital emphasis in recent economic planning is leading to new pressures on the post-compulsory education sector where work-readiness is emerging as a major focus. With concerns about the impact of demographic change as the population ages, there is a renewed emphasis on greater productivity from and less wastage of human capital. Hence retention of young people in the education and training system to at least Year 12 and the development of explicit vocational pathways has become an urgent priority for educators to address. The dilemma is that uncertainties in the future nature and demands of work have to be addressed here and now, while the lead time and costs to produce work ready students is increasing. This paper considers the characteristics of early school leavers in NSW and the strategies developed in that State to re-engage such students in the education system to increase their opportunities for workforce participation.

Introduction

The role of human capital development in economic growth has been the stimulus for education reform in a number of countries (Bassanini & Scarpetta 2001). Increased investment in education is seen by growth theorists to boost both productivity and participation in the workforce. Reform of education systems has been aimed at getting more students achieving an appropriate level of educational attainment to enable a successful transition into the modern workplace (Li 2004, Tomlinson 2004).

However the world of work is changing and this creates a dilemma for education systems in managing preparation for changing conditions which are not clearly predictable. Recent technological change and industry re-structuring has been leading to a demand for higher skilled workers. Higher skilled occupation groups including managers, administrators, professionals and sub-professionals have dominated net employment growth since the mid-1990s in Australia. It is predicted that by 2013 these occupations will represent nearly 44% of employment up from 36% in 1996 (Thomas, Roe & Tarrant 2005).

One of the characteristics of these higher skilled groups is that they require depth of skill and experience beyond that capable of ready achievement in a typical post-compulsory education course without extra involvement with the workplace itself. For example, managers and administrators really need work experience before they can function effectively in their role. This means a need for work placement to be built in to the education program. Such placements add to the cost and complexity of the education provider. Professional and sub-professional education and training has always been considered to require a clear mix of theoretical and practical skill development. To accommodate a shift in employment demands there has been a general expansion of higher education and vocational education and training sectors in most developed economies.

Prediction of work force demand is notoriously fickle. However, some aspects of future demand seem reasonably clear. The extent of future workforce requirements will depend on future economic development and demographic projections of an aging population and declining population of active workers. While not all future employment growth will be in high-skill areas, concerns about the decline in young people in the population mix in coming decades have led to an interest in increasing productive workforce participation by all young people. Such an increase in participation will require an effort to match knowledge and skill requirements beyond those that have characterized early school leavers in the past.

Traditionally, governments have had an interest in tailoring the outcomes of compulsory schooling to allow students who leave at this stage to have a minimum of the human capital requirements to enter the work force. In the current and emerging job market the minimum requirements assumed to have been achieved at the end of compulsory schooling (Year 10) are being seen as insufficient for successful employment. Age (commonly around 15 years) has been the legal criterion for the attainment of the compulsory years of schooling. These traditional assumptions are being tested by the changing requirements for human capital.

As the job market changes, and with the loss of low skill manual employment opportunities for school leavers, the entry level requirements for permanent employment are increasing. Early school leavers are most at risk for future engagement. In 2004 of the 190,000 teenagers not in full-time learning or work in Australia over 60% were early school leavers. Of those who completed Year 12 only 16% were not fully engaged (Lahey & Dusseldorp 2005). Data like these have led to a concern to increase participation to Year 12 to ensure less wastage of employment potential brought about through premature school leaving.

Characteristics of Early School Leavers

In addressing the policy imperative to increase participation and develop employability skills it is necessary to look at the characteristics of early school leavers. While cognitive ability and achievement level have been recognized as important explanatory variables for participation in post-compulsory schooling, few studies have accessed performance data. In their review of research on post-compulsory retention Roussel and Murphy (2000) report that approximately one-third of early school leavers listed expected failure and not being good at schoolwork as an important or very important reason for leaving.

This paper looks at data available on the educational achievement on statewide tests for Year 10 school leavers in New South Wales (NSW) and strategies that have been introduced to better prepare them for the transition to work and further education and training.

In NSW the legal minimum age for leaving school is 15 and most students reach this age during Year 10 of schooling. An end-of-compulsory schooling credential, the School Certificate, has been retained in NSW and a new form of reporting was introduced in 1998. The decision to retain the School Certificate was made because it was considered important that early school leavers have certification of the knowledge and skills that have been achieved and which are relevant to work and post-school life (Aquilina 1997).

The School Certificate presents the results of school assessment in subjects reported against common performance standards. Additionally Year 10 students in NSW sit for external tests in English, Mathematics, Science, Australian History and Geography and Computer Skills and results on these tests are reported as part of the School Certificate. These external tests were introduced to report common knowledge and skills considered important by employers for readiness for work and/or further study or vocational education and training. As the majority of students proceed to Higher School Certificate (HSC) courses the School Certificate tests are not considered 'high stakes' in the same way that HSC examinations are. Nevertheless performance on these tests is predictive of future success in post-compulsory education and training.

A small proportion of students withdraw from the School Certificate program before the end of Year 10. The majority of these students leave on reaching age 15. Data from 1998 to 2006 are shown in Table 1 where the relatively small percentage of the cohort withdrawing appears stable at around 4-6%.

Year	Commenced Year 10	Completed Year 10	Withdrew during Year 10	% of commenced
1998	84607	80919	3688	4%
1999	83883	80504	3379	4%
2000	85155	81434	3721	4%
2001	85048	81308	3740	4%
2002	86425	81776	4649	5%
2003	86757	81888	4869	6%
2004	87773	82930	4843	6%
2005	89591	84998	4593	5%
2006	90650	85946	4704	5%

Table 1: Students leaving during Year 10

The gender pattern of those leaving before completion of Year 10 has changed. Between 1988 and 2001 the proportion of male students withdrawing was greater than the state proportion. However since 2002 the gender balance of students withdrawing before completion of Year 10 has been more consistent with the gender proportion completing Year 10 as can be seen in Table 2.

Year	Withdrawn Students		Year 10 completers	
	Female	Male	Female	Male
1998	44%	56%	50%	51%
1999	45%	55%	49%	51%
2000	47%	53%	49%	51%
2001	47%	53%	49%	51%
2002	49%	51%	49%	51%
2003	49%	51%	49%	51%
2004	48%	52%	49%	51%
2005	50%	50%	49%	51%
2006	49%	51%	49%	51%

Table 2: Gender balance of withdrawn students

While there may be many individual reasons for early school leaving it is to be expected that the most prominent cause is poor attainment in school. For those students who complete Year 10 they receive either the full School Certificate having met all requirements or they receive a record of achievement of those Year 10 courses (ROA10) they have completed. Table 3 shows that the percentage of the Year 10 cohort who do not continue in the education system after completing Year 10 has remained fairly constant at around 20% since 1998.

Year	SC	ROA10	Total	% of Cohort
1998	16352	698	17050	21%
1999	16698	722	17420	22%
2000	15833	627	16460	20%
2001	15312	883	16195	20%
2002	15415	620	16035	20%
2003	15653	631	16284	20%
2004	15855	557	16412	20%
2005	16586	672	17258	20%
2006	16880	914	17794	21%

Table 3: Early school leavers who complete Year 10

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In Table 3 it can be seen that the majority of early school leavers who stay on until the end of Year 10 complete all requirements for the School Certificate.

The pattern of results for the early school leavers for whom some school certificate results are available indicates that they are generally lower performers. For example, Band 4, a middle range result, on the English literacy skills test was achieved by 60-70% of the state but only by about 30% from the early school leaver group. Similarly on mathematics a band 4 result was obtained by between 50-60% of the whole cohort but only by 20-30% of the early school leavers. Table 4 shows the average band level performance achieved by the early school leavers compared to the whole state cohort.

Year	ESL	State
1998	2.8	3.6
1999	3.0	3.8
2000	2.9	3.7
2001	3.0	3.8
2002	2.9	3.7
2003	2.9	3.7
2004	3.0	3.8
2005	3.1	3.9
2006	3.0	3.8

Table 4: Average Band awarded 1998-2005

While test performance data is unavailable on those students who leave school before completing the School Certificate, it is clear that early school leavers as a group have significantly weaker performance on basic knowledge and skills as represented in the School Certificate external tests. This has implications for attempting to retain participation to Year 12 for these students. It is unlikely that they will continue in the school system without teaching and learning strategies tailored to provide them with a better chance of success than they have experienced in their past schooling. Such strategies are unlikely to be able to be provided at the average cost of school funding as is often assumed in economic analyses of the cost-benefit of greater participation.

Retention Strategies

There is a problem for schools attempting to increase retention of weaker Year 10 students. Such students are likely to be unwilling to remain in a program of study in which they feel they cannot succeed. For example, while the NSW HSC program has a course, Fundamentals of English, to assist lower performing students to improve their English literacy skills teachers often report that the students who most need to take it are unwilling to spend more time on a subject they know they are weak at. Typically, post-compulsory programs are seen as involving choice and students tend to want subjects that they feel interested in and in which they feel they have some chance of succeeding.

One common strategy of education systems attempting to address this problem has been to attempt to get more vocational learning into the curriculum offerings for students who are less attracted to and less capable of learning the more academic subjects. The assumption is that vocational subjects will provide a more practical approach to learning with opportunity to develop work place competencies. However, incorporating vocational education into the curriculum without it being seen as less desirable than traditional subjects is a challenge for education systems.

From 1984 to 1995 in NSW a number of initiatives were taken to incorporate vocational education and training (VET) into the HSC curriculum. It was considered a valuable exercise to provide curriculum differentiation to assist retention, but these courses were often taken as 'taster' courses without any clear pathway for future development. In the revisions to the HSC which were implemented in 2000-1, eight industry curriculum frameworks were developed as an alternative to the various VET approaches that had characterised the first phase of VET incorporation into the HSC.

The frameworks are based on national training packages and define how units of competency drawn from these packages are arranged for the purpose of gaining unit credit for the HSC. Wherever possible, VET courses in industry curriculum frameworks (ICFs) are aligned to national VET qualifications. Courses within the framework provide students with the opportunity to develop those workplace competencies which industry has determined are required by an entry-level employee. Typically this means that certificate level II and some certificate level III competencies can be obtained in a framework course.

In a study of the implementation of these curriculum changes Crump and Stanley (2005) reported that at the school level there were mixed understandings of the opportunities afforded by VET courses and some concerns about aspects of bringing together the general and vocational cultures within a school. Bringing the 'real world' experience into the curriculum produced logistical and time pressures that tested the resolve of school management.

The new courses motivate students by offering them the prospect of various routes of progression through a variety of learning styles, settings and modes of assessment (see Ball, Maguire and Macrae 2000 for a similar observation in the UK). The opportunity to cross curricular and provider borders within a secondary environment and, more importantly, to provide entry into skilled employment should make staying on in the post-compulsory years more attractive.

The data on overall retention in NSW since the introduction of these changes shows a small trend upwards in participation from 69.8% of the age cohort in 2000 to 73.2%

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in 2004. Other changes to the HSC involved eliminating some of the less demanding academic subjects and more rigorous requirements for English (see Stanley 2005). These changes may have led weaker students to still consider themselves less likely to succeed if they stayed at school despite the VET offerings.

A report on the value to students of the VET in schools program in NSW by Polesel et al. (2005) was based on a phone survey of 6,360 HSC students from the 2004 cohort in public schools. Two samples of 3,180 each (HSC VET and non-VET) were matched by gender, prior achievement, geographical location and school and were surveyed after completion of their HSC in May 2005. Prior achievement was based on Year 10 School Certificate results.

The report showed that 60% of students who chose a VET subject agreed that the option of a VET subject influenced their decision to stay on at school until Year 12. This agreement was reported for 70% of students with the lowest achievement profile and represented 75% of the lowest achieving boys. Clearly for those taking VET subjects their availability was a significant factor in their staying at school. Interestingly the researchers did not ask the non-VET low achievers who stayed on at school what influenced their decision to stay on at school.

Work placement is a mandatory requirement for the ICFs in the NSW HSC and was designed to ensure students had a better understanding of how their skills were used in the workplace. According to the Polesel et al. (2005, p. 13) study 'between 80 and 90 per cent of respondents...believed that their school had prepared them well for their placement, that their employer was well prepared for them and that they were assessed on their course competencies while at work'. Nearly 16% of the VET sample who were in the labour force had done a work placement with their current employer while at school. This requirement appeared to be successful in building bridges between school and work.

Of interest in this research on VET in the NSW HSC is any difference in the outcomes of the lower quartile of Year 10 achievement as we have already established that early school leavers are more likely to come from this group. Given that the VET students from this group have indicated that the existence of VET options was a factor in their staying on at school one might expect that such students would use VET as a more significant route into post-school destinations than those who did not undertake VET. Table 5 reports the post-school post-HSC outcomes for the lower Year 10 achievement students.

Destination	VET	Non-VET	Difference
University	3.4%	7.4%	4.0%
VET Cert IV+	18.3%	16.6%	1.7%
VET Entry Level	15.9%	13.4%	2.5%
Apprentice	11.9%	8.4%	3.5%
Trainee	5.4%	5.2%	0.2%
Working FT	14.8%	13.6%	1.2%
Working PT			
Casual	19.9%	24.7%	4.8%
Unemployed	10.6%	10.7%	0.1%

Data extracted from Polesel et al. 2005. Note rounding errors mean that columns sum to more than 100%

Table 5: Post-school destination of VET and non-VET students from the lowest quartile of School Certificate Assessment

Given that the two groups were ‘matched’ as low achievers at Year 10, the differences in outcomes are worth considering. Access to a VET course resulted in minimal difference in post-school unemployment (0.1%) and only a small advantage for gaining full-time work (1.2%). The biggest advantage for the VET students was in VET related courses post-school, while the non-VET students were 4.8% more in casual part time work and 4.0% more at university.

From a policy perspective the focus on VET industry pathways in NSW appears to be popular among lower achieving students taking the courses and appears to facilitate their transition to the workforce and orient them towards further vocational training. From a resourcing perspective the VET courses are likely to be more expensive to run than the non-VET courses so their cost-benefit as a retention strategy has to be considered in terms of whether or not other strategies may have been more cost effective had they been available.

Based on a study of a cohort of students surveyed in Year 9 in 1995 and followed up 4-6 years after leaving school Marks (2006, p. vi) found that many educational factors were associated with being in full-time work four years after leaving school. He reported that ‘strong achievements in literacy and numeracy, holding a part-time job while at secondary school, and participating in VET at school help to obtain full-time employment, but few of these factors lead to large impacts’. The exception to this was participation in apprenticeships which promoted full-time work for young men. Traineeships were less successful.

Evaluation of education for work and retention strategies for effective transition into employment is difficult because the employment market does not remain static. Industry re-structuring and changes in global demand for goods and services have local economic and employment impacts which can result in both short term and long-term changes in job opportunities and demands for skills. The current ‘skills shortage’ driven by labour demands arising from the current resources boom has refocused demand for apprenticeships.

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The Australian Technical College initiative of the federal government and the NSW state initiative for trade schools represent an attempt to create a stronger pathway for school students into the areas of skill shortage. These initiatives build on the success of existing VET in schools programs. They are designed to promote trade skills as an important area for future employment.

Clearly there are some school leavers who are not able to make a smooth transition from school to work. While VET in school appears a popular and successful strategy for many lower achievement students, for some it is not providing a successful pathway to employment. More research is required into the needs of those 10% of lower achievement students who remain unemployed after Year 12.

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